

What is claimed is:

1. A method for estimating interference in Common Pilot Channel (CPICH) in a W-CDMA receiver comprising an equalization stage for chip level filtering of received chips, said method comprising
  - 5 despread the CPICH channel after said chip level filtering; and
  - estimating the signal to interference ratio at least partially from despread CPICH symbols.
- 10 2. A method according to claim 1, wherein the W-CDMA receiver is for use in a communications system having a transmitter with single antenna transmission.
- 15 3. A method according to claim 1, wherein the W-CDMA receiver is for use in a communications system having a transmitter with space-time transmit diversity transmission.
4. A method according to claim 3, wherein a virtual space-time decoding is used on the CPICH channel in order to mimic data channel space-time transformation
- 20 5. A method according to claim 3, wherein the received chips are oversampled at chip-level.
6. A receiver for use in a communications system, comprising:
  - an equalization stage for chip level filtering received chips;
  - 25 a despreading module for despreading a common pilot channel (CPICH) after said chip level filtering; and
  - an estimation module for estimating signal-to-interference ratio at least partially from despread CPICH symbols.
- 30 7. A receiver according to claim 6, wherein the estimated signal-to-interference ratio is for use by a user equipment in the communications system to report its channel quality indicator (CQI).

8. A receiver according to claim 6, wherein the communications system comprises a transmitter with single antenna transmission.
9. A receiver according to claim 6, wherein the communications system comprises a transmitter with space-time transmit diversity transmission.  
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10. A receiver according to claim 9, wherein the received chips are over-sampled at chip level.
- 10 11. A W-CDMA communications system comprising:  
a receiver; and  
a transmitter for transmitting a signal stream to the receiver, the signal stream containing a chip stream in a common pilot channel (CPICH), wherein the receiver has at least one antenna to receive one or more chips in the chip stream; the receiver further comprising:  
15 an equalization stage for chip level filtering the received chips;  
a despreading module for despreading the common pilot channel after said chip level filtering; and  
an estimation module for estimating signal-to-interference ratio at least partially from despread CPICH symbols.  
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12. A communications system according to claim 11, wherein the estimated signal-to-interference ratio is for use by a user equipment in the communications system to report its channel quality indicator (CQI).  
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13. A communications system according to claim 11, wherein the transmitter has a single antenna for transmitting the signal stream.
14. A communications system according to claim 11, wherein the transmitter has two  
30 or more antennas for transmitting the signal stream in order to achieve space-time transmit diversity.

15. A communications system according to claim 14, wherein the received chips are over-sampled at chip level.
16. A communications system according to claim 14, wherein a virtual space-time decoding in the receiver is used on the CPICH in order to mimic data channel space-time transformation.  
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17. A communications device in a communications system, comprising:
  - an antenna; and
  - 10 a receiver, operatively connected to the antenna, for receiving communication signals, wherein the communication signals include a transmitted signal indicative of one or more chips in a chip stream in a common pilot channel (CPICH); and wherein the received signals include received chips, the receiver comprising:
    - an equalization stage for chip level filtering received chips;
    - 15 a despreading module for despreading a common pilot channel (CPICH) after said chip level filtering; and
    - an estimation module for estimating signal-to-interference ratio at least partially from despread CPICH symbols.
- 20 18. A communications device according to claim 17, wherein the estimated signal-to-interference ratio is used for reporting a channel quality indicator (CQI) to another component in the communication system.
- 25 19. A communications device according to claim 17, wherein the communications signals are transmitted with a single antenna at a transmit side.
- 20 21. A communications device according to claim 17, wherein the communications signals are transmitted in a space-time transmit diversity transmission fashion.
- 30 21. A communications device according to claim 17, comprising a mobile terminal.